

CLAIMS

What is claimed is:

1. An in-line seat recliner assembly for controllably adjusting the angular position of a seat back relative to a seat bottom, said recliner comprising:
a drive assembly having an input axis;
a driven assembly adapted to be coupled with one of the seat back and the seat bottom and having an output axis generally parallel to said input axis;
and
a transmission assembly disposed between and operably connecting said drive assembly and said driven assembly.
2. The seat recliner assembly of Claim 1, wherein said drive assembly includes an actuator.
3. The seat recliner assembly of Claim 2, wherein said actuator includes a bi-directional electric motor.
4. The seat recliner assembly of Claim 2, wherein said drive assembly includes an actuator cable driven by said actuator.

5. The seat recliner assembly of Claim 3, wherein said drive assembly includes an input shaft driven by said actuator cable and rotatable about said input axis.

6. The seat recliner assembly of Claim 1, wherein said driven assembly includes a threaded output shaft rotatable about said output axis and a screw nut disposed thereon, wherein said screw nut is reciprocally and threadably moveable along said threaded output shaft.

7. The seat recliner assembly of Claim 6, wherein said driven assembly further includes a seat arm having a first end attached to the seat back and a second end pivotally connected to said screw nut.

8. The seat recliner assembly of Claim 1, wherein said transmission assembly includes a gear train having a first helical gear driving a second helical gear, said first helical gear rotatable about said input axis, and said second helical gear rotatable about said output axis.

9. The seat recliner assembly of Claim 1, further comprising an alignment assembly.

10. The seat recliner assembly of Claim 9, wherein said alignment assembly includes first and second alignment plates.

11. The seat recliner assembly of Claim 1, further comprising a housing for retaining said gear train.

12. The seat recliner assembly of Claim 11, wherein said housing is mountable to connect said recliner assembly to the other of the seat back and the seat bottom.

13. A vehicle seat assembly comprising:

a seat bottom;

a seat back coupled with said seat bottom and capable of pivotal adjustment relative to said seat bottom;

a seat recliner assembly comprising a drive assembly having an input axis, a driven assembly adapted to be coupled with one of said seat back and said seat bottom and having an output axis generally parallel to said input axis, and a transmission assembly disposed between and operably connecting said drive assembly and said driven assembly.

14. The vehicle seat assembly of Claim 13, further comprising a housing for retaining said transmission assembly.

15. The vehicle seat assembly of Claim 14, wherein said housing is mountable to connect said seat recliner assembly to the other of said seat back and said seat bottom.

16. The vehicle seat assembly of Claim 13, wherein said drive assembly includes an actuator.

17. The vehicle seat assembly of Claim 16, wherein said actuator includes a bi-directional electric motor.

18. The vehicle seat assembly of Claim 16, wherein said drive assembly includes an actuator cable driven by said actuator.

19. The vehicle seat assembly of Claim 18, wherein said drive assembly includes an input shaft driven by said actuator cable and rotatable about said input axis.

20. The vehicle seat assembly of Claim 13, wherein said driven assembly includes a threaded output shaft rotatable about said output axis and a screw nut disposed thereon, wherein said screw nut is threadably moveable along said threaded output shaft from a first position to a second position.

21. The vehicle seat assembly of Claim 20, wherein said driven assembly further includes a seat arm having a first end attached to the seat back and a second end pivotally connected to said screw nut.

22. The vehicle seat assembly of Claim 13, wherein said transmission assembly includes a gear train having a first helical gear driving a second helical gear, said first helical gear having a rotational axis common with said input axis, and said second helical gear having a rotational axis common with said output axis.

23. The vehicle seat assembly of Claim 13, further comprising an alignment assembly.

24. The vehicle seat assembly of Claim 23, wherein said alignment assembly includes first and second alignment plates.